We claim:

1. A purified modified DNA polymerase that is a modified form of a DNA polymerase obtainable from *Carboxydothermus hydrogenoformans*, wherein said modified DNA polymerase

(a) exhibits reverse transcriptase activity in the presence of magnesium ions and/or manganese ions;

(b) has reduced or no 5'-3' exonuclease activity; and

(c) has substantially no RNaseH activity.

2. A modified DNA polymerase of claim 1 that exhibits reverse transcriptase activity in the substantial absence of manganese ions.

3. A modified DNA polymerase of claim 2 having a molecular weight of about 64 to 71 kDa as determined by SDS polyacrylamide electrophoresis.

4. A modified DNA polymerase of claim 3 having amino acid sequence SEQ ID NO: 11.

5. A DNA sequence encoding a modified DNA polymerase that is a modified form of a DNA polymerase obtainable from *Carboxydothermus hydrogenoformans*, wherein said modified DNA polymerase

(a) exhibits reverse transcriptase activity in the presence of magnesium ions and/or manganese ions;

(b) has reduced or no 5'-3' exonuclease activity; and

(c) has substantially no RNaseH activity.

6. A DNA sequence of claim 5, wherein said modified DNA polymerase exhibits reverse transcriptase activity in the substantial absence of manganese ions.

7. A DNA sequence of claim 6, wherein said modified DNA polymerase has a molecular weight of about 64 to 71 kDa as determined by SDS polyacrylamide electrophoresis.

8. A DNA sequence of claim 7 encoding amino acid sequence SEQ ID NO: 11.

9. A DNA sequence of claim 8 having nucleotide sequence SEQ ID NO: 10.

10. A vector containing a DNA sequence of claim 5.

11. A vector containing a DNA sequence of claim 6.

12. A vector containing a DNA sequence of claim 7.

13. A vector containing a DNA sequence of claim 8.

14. A vector containing a DNA sequence of claim 9.

15. A vector of claim 14 that is $p\Delta_{2\text{-}225}AR_4$.

16. A host cell transformed with the vector of claim 15.

17. A host cell of claim 16 that is *E.coli* GA1.

18. A process for reverse transcribing RNA, comprising carrying out a reverse transcription reaction in a magnesium buffer using a modified form of a DNA polymerase obtainable from *Carboxydothermus hydrogenoformans*, wherein said modified DNA polymerase

(a) exhibits reverse transcriptase activity in the presence of magnesium ions and/or manganese ions;

(b) has reduced or no 5'-3' exonuclease activity; and

(c) has substantially no RNaseH activity.

19. A process of amplifying RNA, comprising carrying out a reverse transcription/polymerase chain reaction in a magnesium buffer using a combination of a first thermostable DNA polymerase and a second DNA polymerase, wherein said second DNA polymerase is a modified form of a DNA polymerase obtainable from *Carboxydothermus hydrogenoformans*, wherein said modified DNA polymerase

(a) exhibits reverse transcriptase activity in the presence of magnesium ions and/or manganese ions;

(b) has reduced or no 5'-3' exonuclease activity; and

(c) has substantially no RNaseH activity.

20. A kit comprising an modified DNA polymerase of claim 1.

21. A kit comprising an modified DNA polymerase of claim 2.

22. A kit comprising an modified DNA polymerase of claim 3.

23. A kit comprising an modified DNA polymerase of claim 4.